



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/598,395	06/20/2000	Michaël J. Natan	PSU 00 2182A	6068

25871 7590 07/21/2003

SWANSON & BRATSCUN L.L.C.
1745 SHEA CENTER DRIVE
SUITE 330
HIGHLANDS RANCH, CO 80129

EXAMINER

MARSCHEL, ARDIN H

ART UNIT PAPER NUMBER

1631

DATE MAILED: 07/21/2003

29

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicant(s)

09/598,395

Applicant(s)

NATAN ET AL.

Examiner

Ardin Marschel

Art Unit

1631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5,7-10,15-17 and 87 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 15 is/are allowed.
- 6) ☒ Claim(s) 1-5,7-10,16,17 and 87 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☒ Interview Summary (PTO-413) Paper No(s). 27.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

Art Unit: 1631

DETAILED ACTION

Applicants' amendment, filed 7/2/03, has been entered.

Applicants' arguments, filed 7/2/03, have been fully considered and they are deemed to be persuasive regarding previous rejections of record. Rejections and/or objections not reiterated from previous office actions are hereby withdrawn. Upon reconsideration, the following rejections and/or objections are newly applied. They constitute the complete set presently being applied to the instant application.

Due to the newly applied rejections summarized below, the finality of the office action, mailed 5/23/03, is hereby withdrawn.

PRIOR ART

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Art Unit: 1631

Claims 1-5, 7-10, 16, 17, and 87 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kang et al. (P/N 6,132,278).

The recent amendment to the instant claims directed to defining the claimed particle as being "freestanding" has been argued as being defined in the instant specification as filed on page 14. Applicants further argued that freestanding is meant to indicate that deposition or growth within a template has occurred with release from the template, which is acknowledged to be set forth in the instant specification on page 14.

Considering the above stated and argued definition, Kang et al. describes a freestanding particle as a diamond microtip as set forth in the abstract. Figures 1a-17, 21-24, 26-33, 36, 37, and 42-52c of the reference depict such microtip structures which vary from a pyramidal shape to pillar shape. A pillar shape is specifically discussed in the reference in column 10, lines 34-40. The fabrication of such microtip structures is described in Kang et al. in column 6, line 32, through column 10, line 55. These microtip structures are released from the molding substrate as described in column 10, lines 56-67, and thus are "freestanding" due to said release practice. It is noted that the depicted microtips are fabricated on a sheet of material, however, the microtips themselves are separately recognized as specific structures throughout the reference and therefore are disclosed specifically and separately albeit fabricated on a sheet of support material. It is, however, also noted that the above definition of "freestanding" lacks any limitation as to whether the claimed particle(s) may or may not be fabricated on a supporting sheet, but only that release from the mold in which they were fabricated

Art Unit: 1631

had occurred. This release from a mold has been pointed to in the above discussion as being clearly disclosed in Kang et al.

A specific pyramidal size for such a microtip is disclosed in column 11, lines 1-6, as being 3 X 3 micrometers at the base which suggests that the size of these structures is in the range of a few micrometers in both length and width as is further supported by the above cited Figures in Kang et al. wherein the dimensions of the depicted microtips are all approximately the same. The pyramidal microtips are depicted as approximating equilateral pyramidal shapes. Thus, the dimensions of the instantly claimed particles are suggested and motivated in Kang et al. for the microtips therein described. Kang et al. describes the width of a microtip tip as being less than 200 Å. (Angstroms) in column 11, lines 4-6. This suggests that tips of less than 20 nm are prepared therein. It is noted that 200 Å = 20 nm with widths of 3 micrometers at the base. The instant claims are limited to a width of 5 nm to 50 micrometers in claim 1 with lesser widths in instant claims 4 and 5. These widths are not limited, however, to being maximum widths of the overall particle and thus are reasonably inclusive of widths of portions of the particles, such as a tip or base as described above as being in Kang et al.

The instantly claimed particle must have 2 - 50 segments. The above described microtips are optionally coated with a metal coating as described in Kang et al. in column 12, lines 35-46, as being the metal, gold. This results in a 2 segment microtip with at least one segment comprising gold as are two limitations in instant claim 1. Other metal segments may be applied to the microtip of Kang et al., such as Platinum or

Art Unit: 1631

Palladium as described in column 18, lines 54-61, which are other metal options within instant claim 1.

The microtip particle of Kang et al. is part of a electronic device in that Kang et al. describes the microtips as being utilized as sensors, diodes, triodes, etc. as described in column 2, lines 25-29, and in examples. Such an electronic device limitation is present in instant claims 16 and 17 and described in said column 2 description in the reference.

Thus, it would have been obvious to someone of ordinary skill in the art at the time of the instant invention to fabricate a microtip as described in Kang et al. with the sizing as instantly claimed as well as coated with certain metals to prepare a freestanding particle as instantly claimed because these characteristics of fabricated particles are suggested or motivated as options within the Kang et al. disclosure as summarized above. It is noted that clearly defined options or species of embodiments within a reference are deemed obvious as being motivated and suggested due to their clear description of such species or options in a reference.

Claims 1-3, 7-9, 16, 17, and 87 are rejected under 35 U.S.C. 103(a) as being unpatentable over Swift et al. (P/N 5,599,615).

Similar to the above rejection, Swift et al. describes fiber fabrication wherein molding and release of a metal coating is performed to result in coated fibers with 2 segments which are freestanding as being freed from the mold. This is set forth in column 7, line 28, through column 8, line 5, wherein additional segments of layers may be added as described in column 8, lines 2-5, to result in suggesting more than 2

Art Unit: 1631

segments. The metals that comprise the layering of the particles of fibers of Swift et al. include silver and gold as instantly claimed and listed in the reference in column 6, line 56, through column 7, line 7. The fiber, or particle, dimensions of length (diameter) and width of less than about 10 microns to 3 millimeters and 4 – 50 micrometers, respectively, are set forth in Swift et al. in column 10, lines 8-16, and column 6, lines 2-8, respectively, as also overlapping with these dimensions in the instant claims. The fibers or particles of Swift et al. are electrical contacts for electrical devices as summarized in the abstract thus also suggesting the electrical device limitations of instant claims 16 and 17.

Thus, it would have been obvious to someone of ordinary skill in the art at the time of the instant invention to fabricate a fiber as described in Swift et al. with the sizing as instantly claimed as well as coated with certain metals to prepare a freestanding particle as instantly claimed because these characteristics of fabricated particles are suggested or motivated as options within the Swift et al. disclosure as summarized above. It is noted that clearly defined options or species of embodiments within a reference are deemed obvious as being motivated and suggested due to their clear description of such species or options in a reference.

Claim 15 is allowed.

Papers related to this application may be submitted to Technical Center 1600 by facsimile transmission. Papers should be faxed to Technical Center 1600 via the PTO Fax Center located in Crystal Mall 1. The faxing of such papers must conform with the notices published in the Official Gazette, 1096 OG 30 (November 15, 1988), 1156 OG 61 (November 16, 1993), and 1157 OG 94 (December 28, 1993)(See 37 CFR § 1.6(d)). The CM1 Fax Center number is either (703)308-4242 or (703)305-3014.

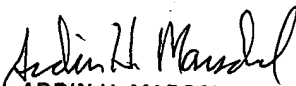
Art Unit: 1631

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ardin Marschel, Ph.D., whose telephone number is (703)308-3894. The examiner can normally be reached on Monday-Friday from 8 A.M. to 4 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Woodward, Ph.D., can be reached on (703)308-4028.

Any inquiry of a general nature or relating to the status of this application should be directed to Legal Instrument Examiner, Tina Plunkett, whose telephone number is (703)305-3524 or to the Technical Center receptionist whose telephone number is (703) 308-0196.

July 18, 2003


ARDIN H. MARSCHEL
PRIMARY EXAMINER